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MORRISON & FOERSTER LLP
1650 TYSONS BOULEVARD
SUITE 300
MCLEAN, VA 22102

EXAMINER

CHEN, WENPENG

ART UNIT PAPER NUMBER

2624

DATE MAILED: 01/23/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/801,805

Applicant(s)

NAKAO, TAKEHISA

Examiner

Wenpeng Chen

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) 8-10 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 11-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3. 6) ☐ Other: _____

Election/Restrictions

1. Claims 8-10 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 6.

Specification

2. The disclosure is objected to because of the following informalities.

-- The number "35" in line 4, page 11 shall be changed to "25".

Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1-2, 4-6 and 11-12 are rejected under 35 U.S.C. 102(e) as being anticipated by Onodera (US patent 6,181,435.)

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Onodera teaches an image processing apparatus including:

-- an input device for acquiring image data; (input unit 17 of Fig. 2; Fig. 3; column 4, lines 35-48; column 4, lines 14-17)

-- an image data processor for applying predetermined processing to the image data acquired by the input device; (column 4, lines 52-67; column 5, lines 1-4; CPU 12 of Fig. 2; column 7, lines 3-14; Any part of CPU for processing image data other than the part for compression is considered to be the image data process. For example, the part for thinning the data.)

-- a compressor for compressing the image data processed by the image data processor; (column 4, lines 52-67; column 5, lines 1-4; CPU 12 of Fig. 2; column 7, lines 3-14; The part for compression in the CPU is considered to be the compressor.)

-- a storage medium for storing the image data compressed by the compressor; (column 6, lines 44-54; the band memory)

-- a controller for controlling the image data processor and the compressor so as to change processing in the image data processor and perform data processing and data compression, in a case where the image data acquired by the input device cannot be stored in the storage medium; (column 4, lines 52-67; column 5, lines 1-4; CPU 12 of Fig. 2; column 7, lines 3-14; column 6, line 63 to column 7, line 2; The part of CPU for changing the compressing means is considered to be the controller. The change of the compressing means includes "a method which reduces the data amount of raster data while appropriately thinning the data, and again compresses the raster data by the same compression method, and upon expansion, interpolates the thinned data with peripheral pixels." The change is controlled by the CPU.)

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-- wherein processing performed by the image data processor is density conversion processing; (column 3, lines 10-42; column 7, lines 3-14; The compression rate can be adjusted with degrading tone-level representation. The process of degrading tone level is density conversion processing.)

-- wherein the controller predicts compression rate required for storing entire image data in the storage medium in a case where the image data acquired by the input device cannot be stored out in the storage medium; (column 3, lines 10-43; column 5, lines 29-48; column 6, line 63 to column 7, line 2; steps S304, S310, S313 of Fig. 3; As shown in S313, the question in step S310 is related to store an entire page of data.)

-- wherein the controller predicts compression rate required for storing entire image data in the storage medium based on volume of image data already stored in the storage medium and volume of image data not yet acquired by the input device; (column 3, lines 10-43; column 5, lines 29-48; column 6, line 63 to column 7, line 2; steps S304, S310, S313 of Fig. 3; As shown in S313, the question in step S310 is based on volume of image data already stored and volume of image data not yet acquired by the input device within a page.)

-- wherein the image data processor conducts processing in accordance with compression rate predicted by the controller. (column 6, line 63 to column 7, line 14)

The above-cited passages also teach the method recited in Claims 11-12 corresponding to Claims 1-2.

Claim Rejections - 35 USC § 103

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4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 3 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Onodera (US patent 6,181,435) as applied to Claims 2 and 12, and further in view of Katayama et al. (US patent 4,975,786.)

Onodera teaches the parental Claims 2 and 12 of the above-listed claims. Onodera further teaches many compression methods including an MH compression and an MMR compression, and JPEG compression can be used. (column 12, lines 4-25) However, Onodera does not teach the feature related to the image density variation recited in the above-listed claims.

Katayama teaches a system for processing image data, the system comprising a controller controls an image data processor such that degree of image density variation becomes less than before image data processor changes processing manners. (column 3, lines 27-33; column 9, lines 19-27; column 10, lines 3-5; column 11, lines 32-68) In the process, particle like noises of black dots are reduced in the white or background regions – a process of reducing image density variation in the white or background regions. As shown in column 6, lines 44-46, by changing the threshold T1, the background (other than the character portion) of an image can be erased. It would be obvious to a person skill in the art that changing of T1 can change image density variation and lead to long run length of white pixels for better compression efficiency.

It is desirable to have various methods for adjusting compression efficiency when a memory is short for storing compressed data. It would have been obvious to one of ordinary skill in the art, at the time of the invention, to include Katayama's processing means for improving run length of white pixels as one alternative of Onodera's means for improving compression efficiency because the combination improves flexibility.

6. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Onodera (US patent 6,181,435) as applied to Claim 1, and further in view of Chen et al. (US patent 6,061,473.)

Onodera teaches the parental Claim 1 of above-listed claim. In column 7, lines 3-14 and column 12, lines 11-25, Onodera teaches that when compression ratio needs to be increased with adjusting parameters such as the thinning process, *the thinned raster data are again compressed with the same compression method*. The passages indicate that the already-compressed data stored in the band memory needs to be replaced with the compressed data of the thinned raster data. However, Onodera does not teach explicitly erasing the data already stored in the band memory related to Claim 7.

Chen teaches a adaptive compression method to prevent memory shortage in which a memory that stores compressed data of a low compression ratio is cleared (erased) to discard all the low-compression-ratio data before a improved- compression-ratio data are stored in the same memory. (column 5, line 49 to column 6, line 23)

It is desirable to discard all the unwanted compressed data in a memory to make available all of the memory to a newly compressed data and to prevent unnecessary interference to the new

compressed data. It would have been obvious to one of ordinary skill in the art, at the time of the invention, to apply Chen's teaching to clear the band memory before Onodera's data are processed with adjusting parameters such as thinning or tone-level change and compressed again because the combination increases the available memory capacity for the new compressed data.

Conclusion

7. The prior art made of record in form PTO-892 and not relied upon is considered pertinent to applicant's disclosure.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wenpeng Chen whose telephone number is 703 306-2796. The examiner can normally be reached on 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David K Moore can be reached on 703 308-7452. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9306 for regular communications and 703-872-9306 for After Final communications. TC 2600's customer service number is 703-306-0377.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 305-4700.

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Wenpeng Chen
Primary Examiner
Art Unit 2624

January 20, 2004

A handwritten signature in black ink, appearing to read 'Wenpeng Chen', written in a cursive style.